

**Division of Water Quality  
P.O. Box 029  
Trenton, New Jersey 08625-0029  
Phone: (609) 633-3823  
Fax: (609) 984-7938**

**Date:** Date 08/18/2008

Re: Final Residual Master General Permit Renewal  
Cat: 4G -Residuals - Reed Beds (GP)  
NJPDES Permit No.:NJ0132501, Program Interest No.: 50577

Dear Interested Party:

Enclosed is a **final** New Jersey Pollutant Discharge Elimination System (NJPDES) permit renewal action identified above which has been issued in accordance with N.J.A.C. 7:14A.

This general permit renewal incorporates process and monitoring requirements for the Phragmites reed bed sludge management system. Sewage sludge from the treatment of sanitary wastewater is discharged to basins in which the reed grass Phragmites, or similar species, is cultivated to facilitate the sludge drying and treatment process.

A summary of the significant and relevant comments received on the draft action during the public comment period, the Department's responses, and an explanation of any changes from the draft action have been included in the Response to Comments document attached hereto as per N.J.A.C. 7:14A-15.16.

If you have questions regarding the draft action, please contact John Murray at (609) 633-3823, by letter or telefax through this office, or by via email at [john.murray@dep.state.nj.us](mailto:john.murray@dep.state.nj.us).

Sincerely,

***Original signed by Mary Jo M. Aiello***

Mary Jo M. Aiello, Chief  
Bureau of Pretreatment and Residuals

Enclosures: Permit Distribution List

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New Jersey Department of Environmental Protection  
Division of Water Quality  
Bureau of Pretreatment and Residuals

**FACT SHEET**

This fact sheet sets forth the principal facts and the significant factual, legal, and policy considerations examined during preparation of the final permit.

**PERMIT ACTION:** Residuals General Permit Action

This Residuals general permit renewal incorporates process and monitoring requirements for the Phragmites reed bed sludge management system. The final general permit action provides a streamlined process for the Phragmites reed bed system of sludge management. Pursuant to N.J.A.C. 7:14A-6.13, persons seeking authorization under a general permit shall submit to the NJDEP a written request for authorization. Those facilities, which have existing authorizations under this general permit will, upon renewal of this general permit, have their authorizations automatically renewed unless the Department receives notice by the permittee that they do not wish to have their authorization renewed.

**1 Name and Address of the Applicant:**

GENERAL PERMIT - CATEGORY 4G  
PER INDIVIDUAL NOTICE OF AUTHORIZATION  
Trenton, NJ 08625

See Table 1 following the Fact Sheet for a list of all current authorizations under this General Permit.

**2 Name and Address of the Facility/Site:**

NJPDES MASTER GENERAL PERMIT - CATEGORY 4G  
PER INDIVIDUAL NOTICE OF AUTHORIZATION  
Trenton, NJ 08625

**3 Description of the Facilities Covered by this Permit:**

This general New Jersey Pollutant Discharge Elimination System (NJPDES) permit renewal is issued in accordance with N.J.A.C. 7:14A, and applies only to sewage treatment plants utilizing the Phragmites reed bed system of sludge management

The Phragmites reed bed system of sludge management combines the action of conventional drying beds with the effects of aquatic plants upon waterbearing substrates. Sewage sludge from the treatment of sanitary wastewater is discharged to basins in which the reed bed grass Phragmites, or similar species, is cultivated to facilitate the sludge drying and treatment process. The reed grass species has the ability to absorb water and convey oxygen to the sludge creating a favorable environment for further biological breakdown.

The Department has determined that this residual use or disposal practice requires similar operating conditions, the same monitoring, and is more appropriately regulated under a general

permit rather than individual permits. Table 1 lists the names of the permittees currently authorized under this general permit.

#### **4 Specific Authorization Criteria:**

The Department will take into consideration the following when applying for coverage under this general permit:

- (1) The residual source must be sewage sludge generated from the on-site sewage treatment plant;
- (2) The quantity and/or quality of the sewage sludge is compatible with the conditions set forth herein including appropriate total solids ranges as set forth at Part IV. D.1.b. of this general permit;
- (3) The residual use or disposal practice requires the same or substantially similar types of operating procedures, and;
- (4) The residual use or disposal practice requires the same or substantially similar monitoring.

#### **5 Request for Authorization (RFA):**

All new domestic treatment works proposing to utilize the Phragmites red bed system and requesting to be covered by this general permit must submit a complete application pursuant to the Department's Technical Manual for Residuals Management and as explained below. A complete application is considered to be the RFA. The Department will then make a determination based upon the permit application as to whether the applicant can be covered by the conditions of the general permit.

In order to qualify for coverage under this general permit a domestic treatment works generator must first apply to the Department to demonstrate that no conditions exist that would necessitate consideration of individual permitting. Application requirements are explained in Part II, General Requirements, B.3.b. of this permit.

All existing authorizations shall be automatically renewed upon reissuance of this general permit.

#### **6 Summary of Permit Conditions:**

Permit conditions are listed in the attached documents.

#### **7 Name, Bureau, and Phone Number of Contact Person:**

John Murray, Bureau of Pretreatment and Residuals (609) 633-3823

#### **8 Basis for Permit Conditions:**

All treatment works with a discharge regulated under N.J.A.C. 7:14A must have permits that implement applicable technical standards for residuals management. Generally, the permit issued to the treatment works generating the residual will include applicable residual quality monitoring

as well as other general conditions required by N.J.A.C. 7:14A-6. In addition, the permit may include conditions related to any aspect of residual management developed on a case-by-case basis where the Department determines that such conditions are necessary to protect public health and the environment.

This NJPDES Residuals general permit renewal incorporates process and monitoring requirements for the Phragmites reed bed sludge management system. The Department consulted with experts in the field of managing sewage sludge through the use of Phragmites reed beds in developing conditions in the general permit. Based on the success and failures of these types of operating systems in New Jersey since 1984, Part IV limits the loading of sludge to the reed beds based on the type of sludge (i.e. anaerobically or aerobically digested) and the total solids of the sludge discharged. The maximum total solids allowed under this general permit are 3% for aerobic sludges and 7% for anaerobic sludges. Furthermore, volatile solids and pH analyses have been proven indicators of system performance based upon the growth of the Phragmites reeds and the subsequent desiccation of the sewage sludge. Therefore, Part III requires monitoring the volatile solids and pH of the sludge discharged to and removed from the reed beds on an annual basis. Permittees are also required to analyze for Molybdenum, Arsenic, Selenium, Copper, Beryllium, Cadmium, Zinc, Lead, Nickel, Mercury, Chromium, Nitrate Nitrogen, Ammonia, and Total Kjeldahl Nitrogen on an annual basis when sludge is removed from the reed beds for use or disposal. These analyses would be used to evaluate the appropriate sludge management alternatives pursuant to land-based management criteria, and to determine the agronomic rate for the land application of sewage sludge. In addition to the above, the sludge discharged to the reed beds must be analyzed for these parameters at a frequency required by the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C). Part IV also sets forth conditions for operation and maintenance of the reed beds.

The documents listed below were instrumental in the NJDEP's review of the application and development of the permit conditions and monitoring requirements for Part III and IV:

1. New Jersey "Water Pollution Control Act" and amendments - N.J.S.A. 58:10A-1 et seq.
2. New Jersey "Solid Waste Management Act" and amendments - N.J.S.A. 13:1E-1 et seq.
3. United States Environmental Protection Agency "Standards for the use or disposal of sewage sludge" (40 CFR Part 503).
4. "New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A).
5. Technical Manual for Residuals Management, May 1998.
6. USEPA Part 503 Implementation Guidance, EPA 833-R-95-001, October 1995. This document is a compilation of federal requirements, management practices and EPA recommended permit conditions for sewage sludge use and management practices.
7. USEPA A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R- 93/003, September 1994.
8. New Jersey "Statewide Sludge Management Plan", January 2006.
9. New Jersey "Sludge Quality Assurance Regulations" (SQAR), N.J.A.C. 7:14C.
10. Technical Support Document for Land Application of Sewage Sludge, Volumes I and II, EPA 822/R-93-001a and 001b, November 1992.

11. USEPA Process Design Manual Land Application of Sewage Sludge and Domestic Septage, EPA/625/R-95/001, September 1995. This manual summarizes nationwide information concerning land application of sludges.
12. USEPA Environmental Regulations and Technology: Control of Pathogens and Vector Attraction in Sewage Sludge, EPA/625/R-92/013, revised October 1999.
13. USEPA Guide to the Biosolids Risk Assessments for the EPA Part 503 Rule, EPA-832-B-93-005, September 1995.

**TABLE 1**

List of existing permit authorizations which qualify for renewal under the general NJPDES permit for Phragmites reed beds, NJ0132501.

<b><u>NJPDES NO.</u></b>	<b><u>FACILITY NAME</u></b>
0023493	Washington Township Schooley's Mountain
0083933	Western Monmouth Utilities Authority
0102075	North Princeton Developmental Center
0105911	Beverly Sewerage Authority
0109380	Marlboro Psychiatric Hospital
0129704	Gateway National Recreation Area
0130940	New Lisbon Developmental Center
0130958	Ancora Psychiatric Hospital
0130966	Woodbine Developmental Center

New Jersey Department of Environmental Protection  
Division of Water Quality  
Bureau of Pretreatment and Residuals  
**RESPONSE TO COMMENTS**

Comments were received on the draft NJPDES **Permit Renewal** No. NJ0132501 issued on April 21, 2008. The Public Notice was published in the Asbury Park Press, Burlington County Times, Courier Post, The Press of Atlantic City, The Star Ledger, and the *DEP Bulletin*. The thirty (30) day public comment period began on 4/23/08 when the public notice was published in the Asbury Park Press, Burlington County Times, Courier Post, and The Star Ledger. The last notice was published May 26, 2008 in The Press of Atlantic City, therefore the comment period closed on June 25, 2008. The following person commented during the public comment period:

1. Michael A. Dimino, P.E., Executive Director, Western Monmouth Utilities Authority, commented in a letter dated June 13, 2008.

A summary of the timely and significant comments received, the New Jersey Department of Environmental Protection's (Department) responses to these comments, and an explanation of any changes from the draft action have been included below:

1. COMMENT:

On an administrative matter, may we assume that an existing permittee will not need to take action to seek authorization under this subject General Permit as we already have a Phragmites Reed Bed operation in existence and a permit already in place?

RESPONSE:

Existing reed bed operations that have existing authorization under this General Permit do not need to submit a new application. Part II B.3.e. of the General Permit states "Upon reissuance of this general permit, authorizations shall be automatically renewed as allowed pursuant to N.J.A.C. 7:14A-6.13(d)9."

2. COMMENT:

We also are confused as to how this operation will be regulated as we also have an individual NJDEP DGW permit in place (NJ0083933) and it would appear redundant and inefficient to have two identical permits regulating the same operation. If the General Permit is issued as final, our NJPDES DGW permit should be revoked. Please clarify.

RESPONSE:

There are no individual permits in place that regulate reed bed operations. The phragmites reed bed operations for the commenter will continue to be regulated under NJG0083933, which is the authorization to operate the reed beds issued under this General Permit. NJ0083933 was administratively closed 11/26/02 and was replaced by NJG0083933.

3. COMMENT:



For a facility that processes anaerobically digested sludge, under Part IV.D.1.b. of the proposed General Permit, loading rates vary based upon the solids loading. As a practical matter, the solids characteristics of this sludge vary over time. We have no means to measure solids concentration on a continuous basis. On average our solids concentration in the digester is 3-4%. We would like to be able to make our own best judgment as to application rate, and duration of application, based on the needs at the time to control the sludge digestion process. The latter is much more critical than the control of sludge application to the reed beds.

RESPONSE:

Part IV D.1.b. of the final General Permit specifies that sludge shall be loaded to the reed beds by a fixed order of loading based on the type and the total solid content of sludge produced. For anaerobic sludges ranging from 3-4.4% total solids, the appropriate maximum loading rate is 30 gallons/sq.ft./year. Use of average total solids data is acceptable to base annual loading rates. It is understood that sludge characteristics will vary over time. Part IV.D.1.c. of the General Permit allows for the demonstration of different loading rates if desired. In addition, Part IV.C.1.c. of the General Permit allows for the modification of operating conditions provided justification is submitted within thirty(30) days.

If in the event that more residuals are generated by the permittee than can be adequately managed by the reed bed operating system, Part IV.D.1.a. of the General Permit states that “any excess residual material must be removed to a permitted sludge management operation.”

4. COMMENT:

For the purposes of completing the “Phragmites Reed Bed Sludge Management System Monitoring Report Form” we have no current provision for precisely measuring sludge flow volume. Metering this type of material is difficult. However, we are able to estimate sludge volumes applied to the reed beds based on the capacity of the pumps and accounting for the time of application. We suggest that this estimate of volume application is adequate for these reporting purposes. Please confirm.

RESPONSE:

Estimating the sludge volume applied as suggested is acceptable.

5. COMMENT:

Under Part IV.D.1.a., we question the mandatory language with regard to a minimum of 14 day intervals of sludge application to a bed. Based upon our long history of operation we ask that our professional judgment be allowed to determine the frequency of applications. Weather plays a key role in this judgment and we would continue to exercise sound judgment based upon our experience.

RESPONSE:

The Department has determined this operational constraint to be necessary over the 20 years of monitoring these types of systems. Where more frequent loadings were conducted in the past, the Department has witnessed severe mortality of the reeds in the system. Nevertheless, the Department is open to working with permittees to develop alternative management practices

under strictly controlled and rigorous monitoring protocols. In addition, as mentioned above, both Part IV.C.1.c. and Part IV.D.1.c. provide for a flexibility in operating conditions.

6. COMMENT:

Under Part IV.D.1.k, Phragmites roots must be removed prior to ultimate sludge application. This is a practical impossibility and a requirement that will be too costly to implement. As you know, the WMUA has contracted with Rutgers University to conduct a study to determine an operational method that cost effectively kills the roots. Under this scenario, dead roots may still be present in the sludge mass. I suggest that the language in this section be changed to accommodate this scenario. We also think that the General Permit should have language that makes it possible to alter the operation of our reed beds to allow for full scale testing of the Rutgers Method to kill the roots within the reed bed system. A successful full-scale test result would precede implementation of the Rutgers Method as the operation method for our reed beds. Such an operation would be fully discussed with the NJDEP for review and approval before implementation.

RESPONSE:

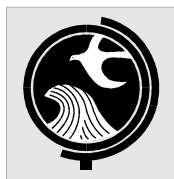
Prior to land application, the Department requires that the rhizomes be removed from the sewage sludge. The Department recognizes that the complete removal of all rhizomes may be costly, however is also aware that it can be achieved. The Department is willing to work with permittees to explore alternative methods to achieve the desired result, to prevent propagation of phragmites reeds outside the reed bed system. This may include pilot scale testing at the reed bed operation. Therefore, the permit conditions have not been changed. If in the event research is done and testing proves successful, the Department will make necessary changes to individual authorizations or the general permit as appropriate.

7. COMMENT:

Finally, we propose that the NJDEP take the lead to identify at least a few sites in New Jersey that can be approved for Phragmites Reed Bed sludge disposal. This sludge is well decomposed, perhaps the most decomposed sludge in the State, and very low in metals content. It can be a great soil amendment that should be considered as a resource. Instead, it is being viewed with concerns that should be reserved for hazardous residuals.

RESPONSE:

The above comment does not pertain to any conditions of the general permit. The Department does not designate or select sludge management methods or sites. Nevertheless, any permittee may apply for a residual permit for the land application of residuals in order to utilize the beneficial properties of the reed bed residuals. In addition, the Department is willing to work with the permittees on developing other alternative solutions to reed bed sludge use and/or disposal.



# NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

**Permit Number: NJ0132501**

**Final: Residual Master General Permit Renewal**

**Permittee:**

NJDEP DIVISION OF WATER QUALITY  
401 E STATE ST  
Trenton, NJ 08625

**Co-Permittee:**

—

**Property Owner:**

NJDEP DIVISION OF WATER QUALITY  
401 E STATE ST  
Trenton, NJ 08625

**Location Of Activity:**

NJPDES MASTER GENERAL PERMIT PRO  
INTEREST  
401 E STATE ST  
Trenton, NJ 08625

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
4G -Residuals - Reed Beds (GP)	08/18/2008	010/01/2008	09/30/2013

By Authority of:  
Commissioner's Office

*Original signed by Mary Jo M. Aiello*

DEP AUTHORIZATION  
Mary Jo M. Aiello  
Bureau of Pretreatment and Residuals  
Division of Water Quality

(Terms, conditions and provisions attached hereto)

## PART I GENERAL REQUIREMENTS: NJPDES

### A. General Requirements of all NJPDES Permits

#### 1. Requirements Incorporated by Reference

- a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.
- b. General Conditions
  - Penalties for Violations N.J.A.C. 7:14-8.1 et seq.
  - Incorporation by Reference N.J.A.C. 7:14A-2.3
  - Toxic Pollutants N.J.A.C. 7:14A-6.2(a)4i
  - Duty to Comply N.J.A.C. 7:14A-6.2(a)1 & 4
  - Duty to Mitigate N.J.A.C. 7:14A-6.2(a)5 & 11
  - Inspection and Entry N.J.A.C. 7:14A-2.11(e)
  - Enforcement Action N.J.A.C. 7:14A-2.9
  - Duty to Reapply N.J.A.C. 7:14A-4.2(e)3
  - Signatory Requirements for Applications and Reports N.J.A.C. 7:14A-4.9
  - Effect of Permit/Other Laws N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
  - Severability N.J.A.C. 7:14A-2.2
  - Administrative Continuation of Permits N.J.A.C. 7:14A-2.8
  - Permit Actions N.J.A.C. 7:14A-2.7(c)
  - Reopener Clause N.J.A.C. 7:14A-6.2(a)10
  - Permit Duration and Renewal N.J.A.C. 7:14A-2.7(a) & (b)
  - Consolidation of Permit Process N.J.A.C. 7:14A-15.5
  - Confidentiality N.J.A.C. 7:14A-18.2 & 2.11(g)
  - Fee Schedule N.J.A.C. 7:14A-3.1
  - Treatment Works Approval N.J.A.C. 7:14A-22 & 23
- c. Operation And Maintenance
  - Need to Halt or Reduce not a Defense N.J.A.C. 7:14A-2.9(b)
  - Proper Operation and Maintenance N.J.A.C. 7:14A-6.12
- d. Monitoring And Records
  - Monitoring N.J.A.C. 7:14A-6.5
  - Recordkeeping N.J.A.C. 7:14A-6.6
  - Signatory Requirements for Monitoring Reports N.J.A.C. 7:14A-6.9
- e. Reporting Requirements
  - Planned Changes N.J.A.C. 7:14A-6.7
  - Reporting of Monitoring Results N.J.A.C. 7:14A-6.8
  - Noncompliance Reporting
    - Hotline/Two Hour & Twenty-four Hour Reporting N.J.A.C. 7:14A-6.10 & 6.8(h)
    - Written Reporting N.J.A.C. 7:14A-6.10(e) & (f) & 6.8(h)
  - Duty to Provide Information N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
  - Schedules of Compliance N.J.A.C. 7:14A-6.4
  - Transfer N.J.A.C. 7:14A-6.2(a)8 & 16.2

## **PART II**

### **GENERAL REQUIREMENTS: DISCHARGE CATEGORIES**

#### **A. Additional Requirements Incorporated By Reference**

##### **1. Residuals Management**

- a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:
  - i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;
  - ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;
  - iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;
  - iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;
  - v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and
  - vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.
  - vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)

#### **B. General Conditions**

##### **1. Notification of Changes**

- a. All permittees shall give written notice to the Department of any planned physical alterations or additions to the permitted facility when the alteration or addition is expected to result in a significant change in the permittee's discharge(s) and/or residual use or disposal practices.

##### **2. Permit Conditions Relating to Residuals Management**

- a. If any applicable standard for residual use or disposal is promulgated under section 405(d) of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.

- b. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.
- c. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.
- d. The preparer must notify and provide information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements to the person who applies bulk residual to the land. This shall include, but not be limited to, the applicable recordkeeping requirements and certification statements of 40 CFR 503.17 as referenced at N.J.A.C. 7:14A-20.7(j).
- e. The preparer who provides biosolids to another person who further prepares the biosolids for application to the land must provide this person with notification and information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements.
- f. Any person who prepares bulk residual in New Jersey that is applied to land in a State other than New Jersey shall comply with the requirement at N.J.A.C. 7:14A-20.7(b)1.ix and/or 20.7(b)1.x, as applicable, to provide written notice to the Department and to the permitting authority for the State in which the bulk residual is proposed to be applied.

### 3. Additional General Requirements

- a. This general permit may be issued, modified, revoked and reissued, or terminated in accordance with applicable requirements of N.J.A.C. 7:14A-15, 16 and 17.
- b. Persons seeking authorization under this general permit shall submit to the Department a written request for authorization. A request for authorization under this general permit shall include the following: A completed NJPDES 1 Form, a completed Form R (Parts A, B, H and I), and proof via copies of certified mail return receipts or other means of verification that the local municipality and affected sewerage authority were notified of the request; and if applicable, Pinelands Certificate of Filing.
- c. Authorizations under this general permit shall become effective upon receipt of notification of authorization by the Department as allowed pursuant to N.J.A.C. 7:14A-6.13(d)5.iii.
- d. An Authorization under this general permit may be suspended, revoked, or denied in accordance with N.J.A.C. 7:14A-6.13(j) through (m).
- e. Upon reissuance of this general permit, authorizations shall be automatically renewed as allowed pursuant to N.J.A.C. 7:14A-6.13(d)9.
- f. The Department may require any person authorized by this general permit to apply for and obtain an individual NJPDES permit or seek and obtain authorization under another general permit. Cases in which an individual NJPDES permit or another general permit may be required are specified at N.J.A.C. 7:14A-6.13(e).

- g. Any permittee authorized by this general permit may request to be excluded from authorization under the general permit by applying for an individual permit. The permittee shall submit an application in accordance with N.J.A.C. 7:14A, with reasons supporting the request. The request shall be processed under N.J.A.C. 7:14A-15, 16 and 17. The request shall be granted by the issuance of an individual permit if the reasons cited by the permittee are adequate to support the request.
- h. When a permittee authorized by a general NJPDES permit is issued an individual NJPDES permit for the authorized discharge, or obtains authorization for that discharge under another general permit, the permittee's authorization under the general permit is automatically revoked on the effective date of the individual permit or on the date of the permittee's authorization under another general permit, whichever the case may be. When an individual NJPDES permit is denied to a permittee authorized by a general permit, or the permittee is denied authorization under another general permit, the permittee's authorization under the general permit is automatically revoked on the date of such denial, unless otherwise specified by the Department.
- i. If a permittee's discharge is excluded from a general permit solely because that discharge already is authorized by an individual permit or authorization under another general permit, the permittee may request that the individual permit or authorization be revoked or modified, as appropriate, and that the discharge be authorized by a general permit identified in that request. The permittee shall submit a request for revocation or modification, with reasons supporting the request, to the Department. The permittee shall submit any request for revocation or modification of an individual permit under N.J.A.C. 7:14A-16, and that request shall be processed under N.J.A.C. 7:14A-15, 16, and 17. If the Department revokes or modifies the individual permit or authorization, and if authorization under a general permit is issued, after the permittee submits any request for authorization required under N.J.A.C. 7:14A-6.13(d), the permittee shall be authorized under the general permit.
- j. With the consent of the permittee, the Department shall revoke an authorization to discharge under this general permit without following the procedures set forth in N.J.A.C. 7:14A-15.6 if the discharge has ceased.

## PART III

# LIMITS AND MONITORING REQUIREMENTS

MONITORED LOCATION:

4G01 Reed Bed Discharge

DISCHARGE CATEGORY(IES):

4G - Residuals - Reed Beds (GP)

**Location Description**

Composite samples, representative of the chemical and physical characteristics, shall be taken when the sludge is discharged to the reed beds.

**Contributing Waste Types**

Dom Residual-Other

**Residuals DMR Reporting Requirements:**

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

**Table III - A - 1: Residuals DMR Limits and Monitoring Requirements****PHASE:** Final**PHASE Start Date:** 10/01/2008**PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Residuals Application	Residuals	*****	*****	*****	*****	REPORT Annual Average	REPORT Annual Maximum	GAL/SQFT	1/Year	Calculated
January thru December	QL	***	***		***	***	***			
Volatile Solids	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	WT%/TS	1/Year	Grab
January thru December	QL	***	***		***	***	***			
pH	Residuals	*****	*****	*****	REPORT Report Per Minimum	*****	REPORT Report Per Maximum	SU	1/Year	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	%TS	1/Year	Grab
January thru December	QL	***	***		***	***	***			



MONITORED LOCATION:

4G02 Reed Bed Removal

DISCHARGE CATEGORY(IES):

4G - Residuals - Reed Beds (GP)

**Location Description**

Composite samples, representative of the chemical and physical characteristics, shall be taken when the sludge is removed from the reed beds for use or disposal.

**Contributing Waste Types**

Dom Residual-Other

**Residuals DMR Reporting Requirements:**

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

**Table III - B - 1: Residuals DMR Limits and Monitoring Requirements****PHASE:** Final**PHASE Start Date:** 10/01/2008**PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Total Amount of Sludge Removed	Residuals	*****	*****	*****	*****	REPORT Annual Total	*****	DMT/YR	1/Year	Calculated
January thru December	QL	***	***		***	***	***			
Volatile Solids	Residuals	*****	*****	*****	*****	*****	REPORT Annual Maximum	WT%/TS	1/Year	Grab
January thru December	QL	***	***		***	***	***			
pH	Residuals	*****	*****	*****	REPORT Report Per Minimum	*****	REPORT Report Per Maximum	SU	1/Year	Grab
January thru December	QL	***	***		***	***	***			
Solids, Total	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	%TS	1/Year	Composite
January thru December	QL	***	***		***	***	***			

**Residuals DMR Reporting Requirements:**

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

**Table III - B - 1: Residuals DMR Limits and Monitoring Requirements****PHASE:** Final**PHASE Start Date:** 10/01/2008**PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Nitrate Nitrogen, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nitrogen, Kjeldahl Total, Dry Wt	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nitrogen, Ammonia Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Molybdenum Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Arsenic, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Selenium, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Copper, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

**Residuals DMR Reporting Requirements:**

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

**Table III - B - 1: Residuals DMR Limits and Monitoring Requirements**
**PHASE:** Final

**PHASE Start Date:** 10/01/2008

**PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Beryllium Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Cadmium, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Zinc, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Lead, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Nickel, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			
Mercury, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

**Residuals DMR Reporting Requirements:**

Submit an Annual DMR: due 60 calendar days after the end of each calendar year.

**Table III - B - 1: Residuals DMR Limits and Monitoring Requirements****PHASE:** Final**PHASE Start Date:** 10/01/2008**PHASE End Date:**

Parameter	Sample Point	Limit	Limit	Units	Limit	Limit	Limit	Units	Frequency	Sample Type
Chromium, Dry Weight	Residuals	*****	*****	*****	*****	REPORT Annual Average	*****	MG/KG	1/Year	Composite
January thru December	QL	***	***		***	***	***			

## **PART IV**

### **SPECIFIC REQUIREMENTS: NARRATIVE**

#### **Residuals - Reed Beds (GP)**

##### **A. Monitoring**

###### **1. Phragmites Reed Bed**

- a. A minimum of five (5) grab samples shall be composited to form a sample representative of the sludge removed from the reed beds for use or disposal. If no sludge is removed from any bed for the calendar year, the composite sample is not required.
- b. Composite samples which are representative of the sludge discharged to the reed beds are to be analyzed in accordance with the reporting requirements of, and frequency as determined by the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C). If sludge is not removed separately for use or disposal, the permittee may be eligible for a reduction under N.J.A.C. 7:14C-1.13.
- c. All sample collection, preservation and analysis shall be performed in a manner consistent with the Sludge Quality Assurance Regulations (N.J.A.C. 7:14C).
- d. All monitoring required by this permit shall be performed by a laboratory certified by the Department for the analysis of those specific parameters in accordance with N.J.A.C. 7:18.
- e. Additional residual quality monitoring may be required if deemed necessary, in the judgement of the Department, through evaluation of monitoring reports, compliance inspection reports or other relevant information including, but not limited to, data concerning residuals quality. Additional residuals quality monitoring includes: additional parameters, additional sampling, additional analyses, and/or additional reporting.

##### **B. Recordkeeping**

###### **1. Phragmites Reed Bed**

- a. In addition to the information required in Table III-A-1 and Table III-B-1 of Part III, Limits and Monitoring Requirements, the permittee shall retain an annual Phragmites report, titled "Phragmites Reed Bed Sludge Management System Monitoring Report Form" (Attached), with information/data accumulated throughout the calendar year and shall retain the information for five (5) years.

##### **C. Reporting**

###### **1. Phragmites Reed Bed**

- a. The permittee shall report monitoring results on the Discharge Monitoring Reports (DMR) or other monitoring report forms where forms are specified, and all applicable information required on the forms shall be entered in the manner specified therein before submission. Equivalent report forms may be submitted with prior written Department approval. Any information not in compliance with this condition shall not be deemed to fulfill the reporting requirements of this permit.

- b. If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under the Sludge Quality Assurance Regulations or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.
- c. The permittee may modify operating conditions to assure proper functioning of reed beds provided technical justification is submitted to the Division of Water Quality, PO Box 029, Trenton, NJ 08625-0029, within thirty (30) days of making the modifications.
- d. The discharge of pollutants, other than domestic sewage sludge generated by the permittee, to the reed beds is prohibited unless written Department authorization to do otherwise is received. The permittee may request that additional sludge sources and/or loadings be utilized where necessary to assure proper functioning of the reed beds. The request must be submitted in writing to the Bureau of Pretreatment and Residuals at least thirty (30) days prior to the anticipated activity.

## **D. Operation and Management**

### **1. Phragmites Reed Bed**

- a. Sludge shall not be loaded onto any one sludge bed more than once every fourteen (14) days. The sludge loading rates outlined herein assume plant maturity and will take effect at the start of the second year of plant growth. During the first year of operation, optimum sludge loading to the beds may not be realized. Any excess residual material must be removed to a permitted sludge management operation. In addition, the fourteen (14) day loading cycle must be extended when unfavorable loading conditions exist (for example, standing water).
- b. Sludge shall be loaded to the reed beds by a fixed order of loading based on the type and the total solid content of the sludge produced. The appropriate loading rates are as follows:
  - i. For Aerobic sludges at less than 1% total solids, the loading rate is 45 gallons/sq.ft/year.
  - ii. For Aerobic sludges from 1-2% total solids, the loading rate is 40 gallons/sq.ft/year.
  - iii. For Aerobic sludges from 2.1-3% total solids, the loading rate is 35 gallons/sq.ft/year.
  - iv. For Anaerobic sludges at less than 3% total solids, the loading rate is 35 gallons/sq.ft/year.
  - v. For Anaerobic sludges from 3-4.4% total solids, the loading rate is 30 gallons/sq.ft/year.
  - vi. For Anaerobic sludges from 4.5-5.9% total solids, the loading rate is 25 gallons/sq.ft/year.
  - vii. For Anaerobic sludges at 6% but not over 7% total solids, the loading rate is 20 gallons/sq.ft/year.
  - viii. For Primary sludges the loading rate is 25 gallons/sq.ft/year.
- c. Upon written request with supporting documentation from the permittee, different loading rates may be approved by the Department for short-term (no longer than six months) trial periods.
- d. The loading rate for an alum residual or a residual mixed with alum shall be reduced by 10 % over the applicable rates as per D.1.b. above.
- e. Standing water is only to be permitted in the sludge beds during the forty-eight (48) hour period following loading; at no other time shall standing water be visible in the sludge beds, except during periods of severe inclement weather;

- f. Plants must be harvested during winter dormancy, or as weather permits, after the plants have turned brown.
- g. Approximately ten (10) inches of stubble must be left standing after harvesting;
- h. Unwanted debris, weeds or other vegetative waste should be removed during the annual reed harvest by carefully raking so as not to disturb the reeds. However, during the first year of operation, in order to protect the monoculture, unwanted weed growth may need to be removed prior to the annual reed harvest. Methods of weed removal that do not require workers entering the beds should be attempted first.
- i. Sludge beds must be taken out of service and sludge removed when the depth of sludge in the bed reaches six (6) inches from the top of the freeboard;
- j. The permittee shall no later than 180 days prior to planned removal of sludge from the reed beds, submit to the Department a plan for removal and management of all accumulated sludge. Said plan shall include and identify all removal/management activities that will be conducted prior to, during, and after the sludge beds are taken out of service, and sludge is removed. This plan shall include, at a minimum, procedures for removing the sludge from the bed(s), a description and analysis of the sludge, method of management of the sludge, anticipated date(s) for removal of sludge from each bed, and approximate volume of sludge material being removed.
- k. This permit does not authorize the land application of residuals under 7:14A-20.7. However, if the chosen method of ultimate sludge management is land application through an outside preparer, *Phragmites* rhizomes must be removed from the sewage sludge prior to transport to an operation which will process sewage sludge for land application.

NJPDES MASTER GENERAL PERMIT PROGRAM INTEREST, Trenton

Permit No.NJ0132501  
RES070001 Residual Master General Permit Renewal



# PHRAGMITES REED BED SLUDGE MANAGEMENT SYSTEM MONITORING REPORT FORM

## I. PERMITTEE INFORMATION

A. Permit No. NJ \_\_\_\_\_ B. Reporting Period (Year) \_\_\_\_\_

C. Permittee's Name \_\_\_\_\_

## II. ANNUAL RECORDKEEPING REQUIREMENTS

- A. The total number of times sludge was loaded onto each bed for the calendar year must be recorded. Information about the total area of each bed in square feet, the total amount of sludge (gallons) loaded onto each bed and the gallons per square foot of sludge loaded onto each bed during the year must also be recorded. A diagram depicting which number corresponds to which bed must be kept on file.

	<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>
	No. of Loadings	Total Area (Sq. Ft.)	Total Gallons Sludge Loaded	Gallons per Sq. Ft. (Divide Column 3 by Column 2) <sup>1</sup>
bed #1	_____	_____	_____	_____
bed #2	_____	_____	_____	_____
bed #3	_____	_____	_____	_____
bed #4	_____	_____	_____	_____
bed #5	_____	_____	_____	_____
bed #6	_____	_____	_____	_____
bed #7	_____	_____	_____	_____
bed #8	_____	_____	_____	_____
bed #9	_____	_____	_____	_____
bed #10	_____	_____	_____	_____
bed #11	_____	_____	_____	_____
bed #12	_____	_____	_____	_____
bed #13	_____	_____	_____	_____
bed #14	_____	_____	_____	_____
<b>Totals:</b>	_____	_____	_____	<b>Annual Avg=</b> _____

<sup>1</sup> Record the total gallons loaded onto each bed for the year, and then calculate the individual gallons per square foot loading for each bed in Column 4. Report the highest gallons per square foot loading from Column 4 as the annual maximum residuals application on the DMR for the 4G01 Monitored Location. Total the number of loadings, the total area (in square feet) and the total gallons of sludge loaded for each bed at the bottom of columns 1 through 3. Calculate the annual average loading in gallons per square foot by dividing the total of Column 3 by the total of Column 2. Report this value as the annual average residuals application on the DMR for the 4G01 Monitored Location.

**APPENDIX A - DISTRIBUTION LIST**

<b><u>Facility</u></b>	<b><u>Address</u></b>	<b><u>NJPDES No.:</u></b>
Washington Township	P.O. Box 226 46 E. Mill Road Long Valley, NJ 07853	0023493
Western Monmouth U.A.	P.O. Box 390 Manalapan, NJ 07726	0083933
North Princeton Dev. Center	c/o Montgomery Township 2261 Route 206 Belle Mead, NJ 08502	0102075
Beverly S.A.	P.O. Box 374 Beverly City, NJ 08010	0105911
Marlboro Psychiatric Hospital	Division of Property Management & Construction P.O. Box 038 Trenton, NJ 08625-0038	0109380
Gateway NRA Sandy Hook	P.O. Box 530 Atlantic Drive Fort Hancock, NJ 07732-0530	0129704
Ancora Psychiatric	202 Spring Garden Road Hammonton, NJ 08037	0130958
New Lisbon Dev. Center	Route 72 New Lisbon, NJ 08064	0130940
Woodbine Dev. Center	1175 DeHirsch Ave. P.O. Box 601 Woodbine, NJ 08270	0130966